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## PATENT ABSTRACTS OF JAPAN

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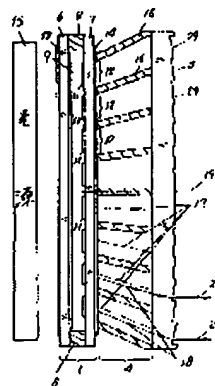
**(54) PLANE IMAGE DISPLAY PANEL DEVICE****(57) Abstract:**

**PURPOSE:** To form a large image screen which gives no sense of incompatibility by providing light guide means of which the center spacing expands with an increase in distance from a plane image panel for each of picture elements to the front face of the panel and bending light at the end or middle of the guides.

**CONSTITUTION:** The light guide means 4 are provided to the front face of the liquid crystal panel 1 and further a Fresnel lens 5 as a means for bending light is disposed in front thereof. The panel 1 is constructed by sandwiching transparent substrates 6, 7 by a circumferential spacer 8, sealing hermetically a liquid crystal to an internal space 9 and disposing many transparent electrodes 10, 11, which intersect orthogonally with each other, on the liquid crystal 9 side at prescribed intervals. The part where both transparent electrode 10, 11 overlap constitutes one picture element 12. A guide plate 16 of which the center spacing expands with an increase in distance from the picture elements is provided to each of the picture elements. The lens 5 changes the ray 18 advancing along the central axis 17

of the means 4 to a nearly parallel ray 20. A large number of such liquid crystal panels are connected vertically and horizontally, by which the large-sized image having a uniform luminance distribution without having visible grating parts and a sense of incompatibility is formed.

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